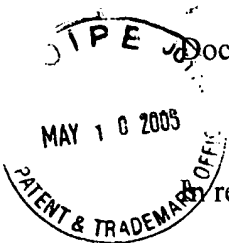


1FW



Docket No.: 043888-0337

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re Application of : Customer Number: 20277
Tetsuo NANNO, et al. : Confirmation Number: 2341
Application No.: 10/513,966 : Group Art Unit: 1723
Filed: November 10, 2004 : Examiner: Not yet assigned
For: METHOD FOR SEPARATING METAL-RESIN JOINT AND SEPARATING APPARATUS

REQUEST FOR CORRECTED FILING RECEIPT

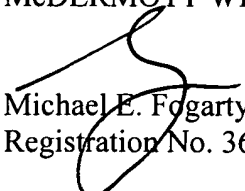
Mail Stop COFR
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Attached is a copy of the Filing Receipt received from the U.S. Patent and Trademark Office in the above-referenced application. It is noted that the that the number of independent claims is incorrect. Attached is a copy of the listing of the claims, which evidences that the number of independent claims should read: 3. Also attached is the Assignment and Recordation Cover sheet which evidence the Assignee information should read: MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD. It is requested that a corrected filing receipt be issued.

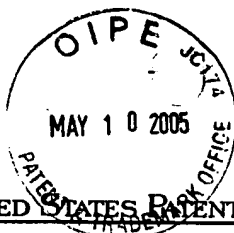
Respectfully submitted,

McDERMOTT WILL & EMERY LLP


Michael E. Fogarty
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Facsimile: 202.756.8087
Date: May 10, 2005

**Please recognize our Customer No. 20277
as our correspondence address.**

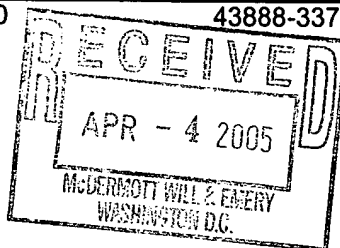


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APPL NO.	FILING OR 371 (c) DATE	ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
10/513,966	11/10/2004	1723	950	43888-337	3	15	2

20277
 MCDERMOTT WILL & EMERY LLP
 600 13TH STREET, N.W.
 WASHINGTON, DC 20005-3096



CONFIRMATION NO. 2341

FILING RECEIPT



OC000000015581628

Date Mailed: 03/31/2005

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please mail to the Commissioner for Patents P.O. Box 1450 Alexandria Va 22313-1450. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

Applicant(s)

Tetsuo Nanno, Osaka, JAPAN;
 Yoichi Izumi, Osaka, JAPAN;

Power of Attorney: The patent practitioners associated with Customer Number 20277.

Domestic Priority data as claimed by applicant

This application is a 371 of PCT/JP03/05312 04/24/2003

Foreign Applications

JAPAN 2002-142146 05/16/2002

Projected Publication Date: 07/07/2005

Non-Publication Request: No

Early Publication Request: No

Title

Method and apparatus for releasing metal-resin joint

Preliminary Class

210

**LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15**

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

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CLAIMS

1. A method for separating a metal-resin joint comprising the steps of:

(1) immersing an article comprising a metal-resin joint with a counter electrode in an alkaline solution; and

(2) applying a voltage over a certain time period between the metal portion of said joint and said counter electrode such that the potential of said metal portion is lower than that of a standard hydrogen electrode.

2. The method for separating a metal-resin joint in accordance with claim 1, wherein the voltage is applied over a certain time period between the metal portion of said joint and said counter electrode such that the potential of said metal portion is -2 V or higher and -0.6 V or lower relative to the standard hydrogen electrode.

3. The method for separating a metal-resin joint in accordance with claim 1, wherein said alkaline solution has a hydroxide-ion concentration of 0.1 M or higher and 15 M or lower and contains alkali metal cations.

4. The method for separating a metal-resin joint in accordance with claim 1, wherein said alkaline solution has a hydroxide-ion concentration of 3 M or higher and 7 M or lower and contains alkali metal cations.

5. The method for separating a metal-resin joint in accordance with claim 1, wherein said alkaline solution has a

temperature of 0°C or higher and 80°C or lower.

6. The method for separating a metal-resin joint in accordance with claim 1, wherein said step (2) comprises applying ultrasonic vibration to said joint.

7. The method for separating a metal-resin joint in accordance with claim 1, wherein said step (2) comprises applying peeling stress to said joint.

8. The method for separating a metal-resin joint in accordance with claim 1, wherein said metal portion comprises one or more selected from the group consisting of Al, Ti, Cr, Mn, Fe, Co, Ni, Cu, Zn, Mo, Rh, Pd, Ag, Sn, Re, Os, Ir, Pt, Au, Hg and Pb.

9. The method for separating a metal-resin joint in accordance with claim 1, wherein the resin portion of said joint comprises one or more selected from the group consisting of polyolefin, polyamide, polyester, polyacetal, polycarbonate, polyarylene ether, polyarylene sulfide, polysulphone, polyether ketone, polyimide, fluorin-containing polymer, natural rubber, phenol resin, polyurethane, silicone resin, and epoxy resin.

10. The method for separating a metal-resin joint in accordance with claim 1, wherein said joint is formed by (i) application of a resin material to a metal article, (ii) injection molding of a resin material onto a metal article, or (iii) bonding of a metal and a resin material by vulcanization.

11. The method for separating a metal-resin joint in

accordance with claim 1, wherein the metal portion and the resin portion of said joint are bonded with an adhesive or adhesive tape, and said adhesive or adhesive tape comprises one or more selected from the group consisting of vinyl acetate resin, acrylic resin, synthetic rubber, nitrile rubber, epoxy resin, cyanoacrylate resin, and polyvinyl chloride resin.

12. A method for recycling a waste article comprising the steps of:

(1) collecting a waste article comprising a metal-resin joint;

(2) immersing said joint and a counter electrode in an alkaline solution;

(3) separating the resin portion from the metal portion by applying a voltage over a certain time period between the metal portion of said joint and said counter electrode such that the potential of said metal portion is lower than that of a standard hydrogen electrode; and

(4) segregating the separated resin portion and said waste article from which the resin portion has been separated.

13. An apparatus for separating a metal-resin joint comprising:

(a) a container made of an alkali-proof material for accommodating an article comprising a metal-resin joint;

(b) an alkaline solution contained in said container;

(c) a counter electrode immersed in said alkaline

solution;

(d) a power source;

(e) a connecting member A for electrically connecting one terminal of said power source with the metal portion of said joint of said article comprising the metal-resin joint; and

(f) a connecting member B for electrically connecting the other terminal of said power source with said counter electrode.

14. The apparatus for separating a metal-resin joint in accordance with claim 13, wherein said connecting member A comprises a conductive material, and a portion of said conductive material is coated with an insulating oxide layer.

15. The apparatus for separating a metal-resin joint in accordance with claim 14, wherein said insulating oxide layer is coated with an insulating resin layer.

OIP E JG174
MAY 10 2005
PATENT & TRADEMARK OFFICE

FORM PTO-1595
(Rev. 10/02)

RECORDATION FORM COVER SHEET

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

Docket No.: 43888-337

PATENTS ONLY

To the Honorable Commissioner for Patents and Trademarks: Please record the attached original documents or copy thereto:

1. Name of Conveying Party(ies):

Tetsuo NANNO and Yoichi IZUMI

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

3. Nature of Conveyance:

☒ Assignment

☐ Merger

☐ Security Agreement

☐ Change of Name

☐ Other

Execution Date: September 3, 2004, September 3, 2004

2. Name and address of receiving party(ies):

Name: MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.

Address: 1006, Oaza Kadoma,
Kadoma-shi,
Osaka 571-8501 JAPAN

Additional name(s) & address(es) attached? ☐ Yes ☒ No

4. Application number(s) or patent number(s):

If the document is being filed together with a new application, the execution date of the application is: September 3, 2004,
September 3, 2004

A. Patent Application No(s).

B. Patent No(s).

Additional numbers attached? ☐ Yes ☒ No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: MCDERMOTT WILL & EMERY LLP

Internal Address:

Street Address: 600 13th Street, N.W.

City: Washington State: D. C. Zip: 20005-3096

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 3.41) \$40.00

☐ Enclosed

☒ Authorized to be charged to deposit account

8. Deposit account number:

500417

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9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Michael E. Fogarty, 36,139

November 10, 2004

Name and Registration No. of Person Signing

Signature

Date

Total number of pages including cover sheet: 3

OMB No. 0651-0027 (exp. 6/30/2005)

Attorney Docket No.: _____

ASSIGNMENT

WHEREAS, Tetsuo NANNO and Yoichi IZUMI
hereinafter called the "Assignors," have jointly invented a new and useful invention entitled
METHOD FOR SEPARATING METAL-RESIN JOINT AND SEPARATING APPARATUS
for which they have:

- (a) filed an application for United States Letters Patent on
_____ as (Serial No. _____); or
- (b) executed an application for United States Letters Patent on
_____ ; or
- (c) filed a provisional application on _____
as (Serial No. _____); and

WHEREAS, Matsushita Electric Industrial Co., Ltd., a corporation organized and
existing under the laws of Japan, having a place of business at:
1006, Oaza-Kadoma, Kadoma-shi, Osaka 571-8501 Japan,
hereinafter called the "Assignee," is desirous of acquiring the entire right, title and
interest in and to said invention, the application above identified, and in, to and under
any Letters Patent which may be obtained to said invention, as hereinafter more fully
set forth;

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN, be it known that for and in
consideration of the sum of One Dollar (\$1.00), and other valuable and legally sufficient
considerations, the receipt of which by said Assignors from the said Assignee is hereby
acknowledged, the said Assignors have sold, assigned and transferred, and by these presents do
sell, assign and transfer unto the said Assignee, the entire, right, title and interest for the United
States in and to the invention and application hereinabove identified, and any Letters Patent of
the United States that may issue for said invention, together with the entire right, title and interest
in and to said invention and applications for Letters Patent and Letters Patent therefor, in all
countries foreign to the United States, including the full right to claim for any such application all
benefits and priority rights under any applicable convention; to have and to hold for the sole and
exclusive use and benefit of the said Assignee, its successors and assigns, to the full end of the
term or terms for which any and all of said Letters Patent for said inventions may issue.

And the said Assignors do hereby covenant and agree, for themselves and their legal representatives, that they will assist the said Assignee in the prosecution of the application herein identified; in the making and prosecution of any other applications for Letters Patent that the said Assignee may elect to make covering the invention herein identified, as hereinabove set forth; in vesting in the said Assignee like exclusive title in and to all such other applications and Letters Patent; and in the prosecution of any interference which may arise involving said invention, or any application or Letters Patent herein contemplated; and that they will execute and deliver to the said Assignee any and all additional papers which may be requested by the said Assignee to fully carry out the terms of this Assignment.

The undersigned hereby grant(s) the attorneys of McDermott, Will & Emery LLP the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document.

And the Commissioner of Patents and Trademarks is hereby authorized and requested to issue Letters Patent to the said Assignee in accordance with the terms of this Assignment.

IN TESTIMONY WHEREOF, the said Assignors have hereunto set their hands and affixed their seal.

Date:
(Seal)

September 3, 2004

Tetsuo Nanno

Tetsuo NANNO

Date:
(Seal)

September 3, 2004

Yoichi Izumi

Yoichi IZUMI